RECLAMATION
Managing Water in the West

FINAL ENVIRONMENTAL ASSESSMENT

KERN TULARE WATER DISTRICT - RETURN OF BANKED WATER

November 2009

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

RECLAMATION
Managing Water in the West

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AF (acre-foot) – The volume of water required to cover one (1) acre of land (43,560 square feet) to a depth of one (1) foot.

Aquifer – A geologic formation (soil or rock), group of formations, or part of a formation capable of storing, receiving and transmitting water.

CEQ (Council on Environmental Quality) - Coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

cfs (cubic feet per second) - A rate of water flow at a given point, amounting to a volume of one (1) cubic foot for each second of time.

CVC – Cross Valley Canal

CVP (Central Valley Project) – Central Valley Project owned by the United States and managed by the Department of the Interior, Bureau of Reclamation

CVPIA (Central Valley Project Improvement Act) – Central Valley Project Improvement Act, Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706)

Diversion – A channel constructed across the land slope to intercept surface runoff and conduct it to an outlet.

DWB (Drought Water Bank) – Established in 2009, DWR will purchase water from willing sellers primarily from water suppliers upstream of the Sacramento-San Joaquin Delta. This water will be transferred using SWP or CVP facilities to water suppliers that are at risk of experiencing water shortages in 2009 due to drought conditions and that require supplemental water supplies to meet anticipated demands.

DWR – California Department of Water Resources

EA – Environmental Assessment

EPA – U.S. Environmental Protection Agency

ESA – Federal Endangered Species Act

FKC – Friant Kern Canal

FWCA – Fish and Wildlife Coordination Act

Groundwater – Water stored underground in rock crevices and in the pores of geologic materials that make up the Earth's crust.

KTWD – Kern-Tulare Water District

MBTA - Migratory Bird Treaty Act

MCL (Maximum Contaminant Load) - legal threshold limit on the amount of a hazardous substance that is allowed in drinking water under the Safe Drinking Water Act

NEPA – National Environmental Policy Act

Reclamation – U.S. Bureau of Reclamation

Region - Tulare Lake Hydrologic Region

SWID - Shafter Wasco Irrigation District

SWP (State Water Project) - The world's largest publicly built and operated water and power development and conveyance system, the SWP was designed and is operated by the DWR.

TDS (Total Dissolved Solids) - combined content of all inorganic and organic substances contained in a liquid which are present in a molecular, ionized or micro-granular suspended form

µg/l – micrograms per liter

USC (U.S. Code) - Codification by subject matter of the general and permanent laws of the United States. It is divided by broad subjects into 50 titles and published by the Office of the Law Revision Counsel of the U.S. House of Representatives.

USFWS – U.S. Fish and Wildlife Service

KERN-TULARE WATER DISTRICT RETURN OF BANKED WATER

1.0 INTRODUCTION

The Kern-Tulare Water District (KTWD) is proposing to return a total of up to 2,790 acre-feet (AF) of previously banked Central Valley Project (CVP) water into the Friant-Kern Canal (FKC) for direct delivery to meet its in-District demands for a period of five years beginning in November 2009 and extending through August 2014 (see Figure 1 for project location).

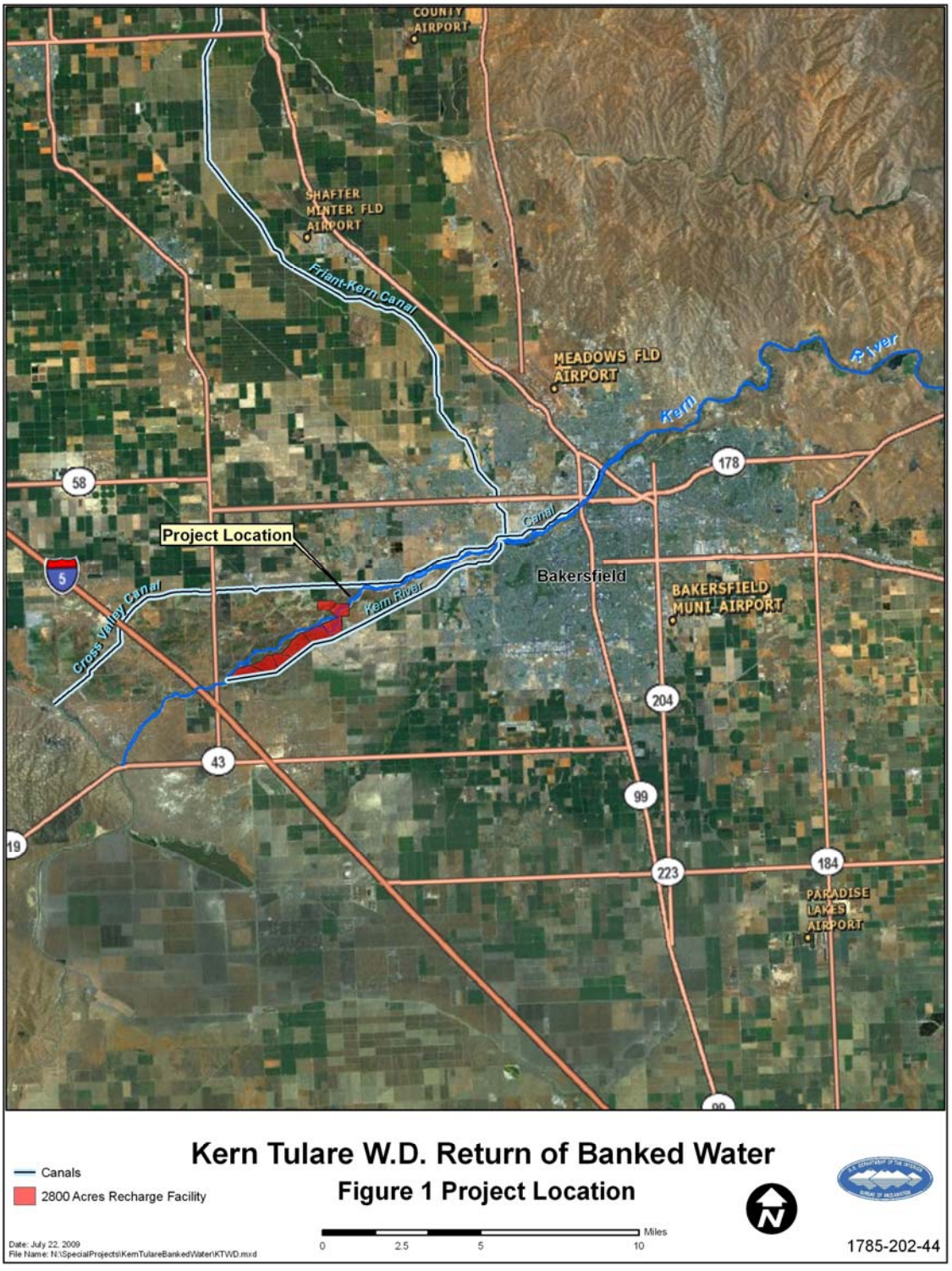
Intense rainfall in December 1992 and January 1993 made excess water available for purchase at a reasonable price to those that would not normally have it available to them. KTWD was able to acquire some of that water from Shafter Wasco Irrigation District (SWID) in the form of Friant Class 2 water. This water was not needed for KTWD's in-District demands and was banked in the City of Bakersfield's (City's) 2800 Acres spreading facility during February and March 1993 for future use. The KTWD delivered 3,000 AF of this water from the FKC into the 2800 Acres for banking under the Kern County Water Agency's existing banking agreement with the City[1]. The source of water conveyed pursuant to this approval would be derived from the previously banked CVP water in the City's 2800 Acres and the KTWD would return the water in the FKC when capacity is available.

1.1 BACKGROUND

The KTWD has a contract with the City for an average annual supply of 23,000 AF of Kern River water. Water under this contract is typically delivered to Kern County Water Agency Improvement District No. 4 (ID4) in exchange for State Water Project (SWP) water or other Kern River supplies. The SWP water is conveyed through the Cross Valley Canal (CVC), where it is either delivered to the FKC or exchanged with Arvin-Edison for water available in the FKC. Another means of delivering Kern River Water to the KTWD is to convey via the Beardsley Canal and deliver it to the FKC.

The KTWD has a contract with Kern County Water Agency for the purchase of SWP water. Water under these contracts is available from time to time and has been purchased by the KTWD. This water is available in the CVC, where it is either delivered to the FKC or exchanged with Arvin-Edison for water available in the FKC. Once water is delivered into the FKC from the CVC or Beardsley Canal, it is delivered to the KTWD through an operational exchange facilitated by Friant Water Authority with other deliveries on the FKC.

[1] The total amount of water sent to the 2800 Acres Recharge Facility was 3,000 AF, but due to spreading losses of approximately 7% (210 AF) the net water banked was 2,790 AF (Kern County Water Agency, 1997).


COUNTY AIRPORT
SHAFTER MINTER FLD AIRPORT
Friant-Kern Canal
MEADOWS FLD AIRPORT
Kern River
178
58
Project Location
Canal
5
Bakersfield
BAKERSFIELD MUNI AIRPORT
Cross Valley Canal
Kern River
204
43
99
19
223
184
PARADISE LAKES AIRPORT
Kern Tulare W.D. Return of Banked Water
Figure 1 Project Location
Canals
2800 Acres Recharge Facility
Miles
0
2.5
5
10
Date: July 22, 2009
File Name: N:\SpecialProjects\KernTulareBankedWater\KTWD.mxd
1785-202-44

1.2 PURPOSE AND NEED

The purpose of this action is to allow the KTWD to convey their previously banked CVP water in the FKC for delivery to their service area at times when other water supplies are not available. The KTWD needs approval to deliver its previously banked CVP water to agricultural lands within its service area.

Due to federal and state regulatory actions in the Delta, ongoing San Joaquin River issues, and increased urbanization throughout the state, the KTWD needs the ability to deliver previously banked water through the FKC to meet its existing in-District demands. Federal and state regulatory actions in the Delta have severely limited the ability of the KTWD to receive its CVP contract water supplies. Over time, these regulatory actions continue to reduce CVP water supplies available to the KTWD and would likely cause the KTWD to increase its reliance on Kern River and SWP water supplies. In addition, a coalition of environmental groups has filed a lawsuit against the Federal government related to water supply contracts in the Friant Division of the CVP which has the potential to reduce the ability of the KTWD, Arvin-Edison and others to exchange Friant water supplies.

2.0 ALTERNATIVES

In accordance with the National Environmental Policy Act (NEPA), this Environmental Assessment (EA) considers two alternatives: the No Action Alternative and the Proposed Action Alternative.

2.1 NO ACTION

Under the No Action Alternative, Reclamation would not approve the KTWD's proposal to return banked water into the FKC and the KTWD would not be able to meet its existing in-District water demands. The No Action Alternative would likely cause the KTWD to increase its reliance on Kern River and SWP water supplies.

2.2 PROPOSED ACTION

Under the Proposed Action Alternative, the KTWD proposes to return a total of up to 2,790 AF of CVP water into the FKC for direct delivery within the KTWD to meet its in-District demands for a period of five years beginning in November 2009 and extending through August 2014. Reclamation proposes to approve this return of previously banked CVP water for the KTWD to convey in the FKC for delivery at times when other water supplies are not available. The Proposed Action does not involve any construction activities and would not cause any land use changes.

3.0 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

This section discusses the affected environment and environmental consequences of the No Action and Proposed Action Alternatives. Neither the No Action nor the Proposed Action Alternative would affect the following resources; therefore, they are not analyzed in further detail in this EA: air quality, power, geology and soils, socioeconomics, recreation, noise, hazardous and toxic waste, and transportation and traffic.

3.1 SURFACE WATER RESOURCES

3.1.1 Affected Environment

The FKC, completed in 1951, carries water over 151 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare, and Kern counties. The FKC has a capacity of 5,000 cfs, gradually decreasing to 2,000 cfs at its terminus.

In 1975, the locally financed CVC was completed bringing water from the California aqueduct through a series of six pump lifts to the east side of the southern San Joaquin Valley (Friant Water Authority 2009).

The Kern River provides drainage for the southern Sierra Nevada Mountains and flows through the middle of the City. Melted snow and rainwater from the Sierra Nevada Mountains feeds the Kern River and percolates in the channel. Precipitation falling within the City is collected in a series of unlined drainage basins that allows percolation into the ground. The average annual captured/percolated precipitation in the City's System's service area amounts to approximately 5,600 AF. Kern River Water, SWP water and some federal water are percolated into the groundwater basin and stored for later well extraction and use. (City of Bakersfield 2007)

The KTWD has a contract with Reclamation for 53,000 AF of annual water supply from the CVP. The KTWD has executed a long-term exchange agreement with Arvin-Edison Water Storage District in order to receive their CVP supply. To convey the CVP water supply from the Delta, where the KTWD's CVP water supply originates, DWR conveys water under the CVP contract through the California Aqueduct to Tupman. From Tupman, the water is conveyed in the CVC where it is either delivered directly to the FKC or exchanged with Arvin-Edison for water available in the FKC. (Reclamation 2006)

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, the KTWD would not be able to deliver water to agricultural lands within its service area. As a result of potentially reduced CVP water supplies, the KTWD may need to increase its reliance on Kern River and SWP water supplies. Potential impacts to the Kern River and other SWP water supplies may occur under the No Action Alternative due to increased pumping requirements.

Proposed Action

The source of water conveyed pursuant to this approval would be derived from previously banked CVP water in the City's 2800 acres. Water delivered under the Proposed Action would be pumped from existing wells in the City's 2800 acres, under agreement with Kern County Water Agency, and delivered into the CVC. From the CVC, water would be introduced to the FKC through Kern-Tulare's existing siphons or the FKC/Cross Valley Canal intertie, both located near the terminus of the FKC.

All water deliveries would be metered as they enter the FKC by propeller meters or other methods of measurement acceptable to Friant Water Authority and Reclamation. The KTWD would be responsible for providing to Reclamation monthly operational reports by the 20th of the month following delivery documenting the delivery of the water. These reports would identify the source of the KTWD's water scheduled deliveries and deduction of conveyance losses consistent with the FKC operational guidelines.

Water rights held by the United States or others would not be altered. The Proposed Action does not involve any construction activities and would not cause any land use changes. Water conveyed under this action would satisfy the then existing water quality standards for the FKC adopted by Friant Water Authority and Reclamation.

The Proposed Action would involve the return of CVP water previously banked at the City's 2800 Acres. The Proposed Action would not change how water or land is managed. The water returned under the Proposed Action would be used to support irrigated lands already in agricultural production and would not require the use of additional surface water for irrigation. As a result, the Proposed Action would not impact surface water resources.

3.2 GROUNDWATER RESOURCES

3.2.1 Affected Environment

The depth to groundwater varies from about 200 feet to over 600 feet throughout the KTWD. There are static groundwater levels taken in the spring and do not include the temporary drawdown of 50 to 100 feet caused by pumping. Sources of groundwater replenishment include underflow in the KTWD from both the east and west. (Reclamation 2006)

The KTWD resides within the Kern County groundwater sub-basin within the San Joaquin Valley Basin encompassed by the Tulare Lake Hydrologic Region (Region). The Region comprises the drainage area of the San Joaquin Valley south of the San Joaquin River. The Region is essentially a closed basin since surface water drains north into the San Joaquin River only in years of extreme rainfall. The Region has 12 distinct groundwater basins and seven sub-basins of the San Joaquin Valley groundwater basin, which crosses north into the San Joaquin River Hydrologic Region. These basins underlie approximately 5.33 million acres (8,330 square miles) or 49 percent of the entire Hydrologic Region area. The Kern County groundwater basin includes the Kern River and the Poso Creek drainage areas, as well as the drainage areas of west side streams in Kern County. (Reclamation 2006)

The City of Bakersfield's Water System (System) currently obtains all its delivered water supply through groundwater pumping. The System historically and currently supplies its customers water by pumping groundwater from the Kern County groundwater basin, a sub-basin of the Southern San Joaquin Valley Groundwater Basin. Although this groundwater basin is not adjudicated, the System manages the groundwater basin through on-going groundwater recharge projects. The System does not have a limit on the quantity of water that may be extracted from the groundwater basin; however, a positive water balance has been historically maintained by the City. Stability of the groundwater supply within the City is supported by groundwater replenishment activities. (City of Bakersfield 2007)

Sources of recharge to the Kern County subbasin include precipitation and runoff, Kern River channel and canal seepage, and spreading/banking. Natural recharge is provided by runoff from the Sierra Nevada Mountains, which feeds the Kern River and percolates, and by precipitation which falls over the City and is captured in unlined drainage basins. (City of Bakersfield 2007)

Spreading and banking is the main replenishment activity that historically has been used within the Kern County sub-basin and involves spreading water in open basins to percolate into the groundwater supply and store for future use. The City's 2800 Acres recharge facility is approximately six miles long and includes old river channels, overflow lands and constructed spreading basins. It is located in and along the Kern River approximately eight miles west of Highway 99. The City began spreading water in the 2800 Acres area in 1978 through the use of one basin and a number of temporary embankments. An average of 18,200 AF of water is banked annually in the 2800 Acres area. (City of Bakersfield 2007)

Pumping from the groundwater basin underlying the System's service area, in conjunction with the extraction of stored groundwater in the 2800 Acres area, and using treated surface water deliveries to replenish the basin will meet foreseeable water demands. A future drought will not affect the ability to meet demands for water service to the System's service area. (City of Bakersfield 2007)

Irrigation District No. 4 (ID4) of the Kern County Water Agency (KCWA) was formed to alleviate groundwater overdraft in metropolitan Bakersfield and outlying areas by providing a supplemental surface supply. ID4 receives most of its water supply from the SWP, although it exchanges SWP water for Kern River water whenever possible. ID 4 operates a water treatment plant, with contracts to purify up to 25,000 AF of water annually, and wholesales this treated water to purveyors in lieu of their pumping from groundwater.

3.2.2 Environmental Consequences

No Action
Under the No Action Alternative, groundwater resources in the City and the surrounding area would remain unchanged. As a result of potentially reduced CVP water supplies, the KTWD may need to increase its reliance on Kern River and SWP water supplies, which could in turn affect groundwater resources within the KTWD service area.

Proposed Action
The Proposed Action would involve the return of water previously banked at the City's 2800 Acres. The Proposed Action would not change how groundwater or land is managed. The water returned under the Proposed Action would be used to support irrigated lands already in agricultural production. The water would be used to irrigate existing crops rather than require new surface or groundwater supplies. The City's 2800 Acres area receives banked water from additional sources; therefore, the Proposed Action would not impact groundwater resources.

3.3 WATER QUALITY

3.3.1 Affected Environment

In general, groundwater quality throughout the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high Total Dissolved Solids (TDS), nitrate, arsenic, and organic compounds. (Reclamation 2006)

The areas of high TDS content are primarily along the west side of the San Joaquin Valley and in the trough of the valley. High TDS content of west-side water is due to recharge of stream flow originating from marine sediments in the Coast Range. High TDS content in the trough of the valley is the result of concentration of salts because of evaporation and poor drainage. (Reclamation 2006)

In the central and west-side portions of the valley, where the Corcoran Clay confining layer exists, water quality is generally better beneath the clay than above it. Nitrates may occur naturally or as a result of disposal of human and animal waste products and fertilizer. Areas of high nitrate concentrations are known to exist near the town of Shafter and other isolated areas in the San Joaquin Valley.

Salinity is the primary contaminant affecting water quality and habitat in the Region, a consequence of agriculture compounded by groundwater overdraft. Agricultural runoff and drainage are also the main sources of nitrate, pesticides, and selenium that can impact groundwater and surface water beneficial uses. The Region also has a relatively large concentration of dairies that contribute microbes, salinity and nutrients to both surface and groundwater. Nitrate has contaminated more than 400 square miles of groundwater in the region. In addition, more than 800 oilfields discharge a wide variety of contaminants to the waters of the Region. (Reclamation 2006)

During 2001, the U.S. Environmental Protection Agency (EPA) provided notice to all water purveyors that the Maximum Contaminant Level (MCL) for arsenic would be lowered from 50 micrograms per liter (µg/l) to 10 µg/l. That advanced notice provided the City an opportunity to develop plans to address arsenic concentrations that affect its wells. In January 2006, the EPA reduced the MCL for arsenic to 10 µg/l. Prior to the new MCL, the City had discontinued use of wells of concern that may exceed 10 µg/l. (City of Bakersfield 2007)

3.3.2 Environmental Consequences

No Action
Under the No Action Alternative, water quality would remain unchanged within the City's 2800 Acres, CVC and FKC.

Proposed Action
Water returned to KTWD under the Proposed Action would satisfy the then existing water quality standards for the FKC adopted by Friant Water Authority and the Reclamation. The Proposed Action would not impact water quality of either surface or groundwater resources.

3.4 AGRICULTURE AND LAND USE

3.4.1 Affected Environment

The KTWD encompasses 23,433 acres located on the eastern side of the San Joaquin Valley in Kern and Tulare counties, approximately eight miles east of Delano and 27 miles north of Bakersfield. All irrigated lands are currently planted to high-value permanent crops. The KTWD provides no domestic or residential water service. A summary of land use in 2008 is presented in Table 1 below.

The annual irrigation demand within the KTWD is approximately 55,000 AF, of which the KTWD has historically provided approximately 43,000 AF. The remaining 12,000 AF is provided by groundwater that is pumped by water users with privately owned wells.

The KTWD has a contract with the Reclamation for an annual supply of up to 53,300 AF of water from the CVP. The State of California Department of Water Resources (DWR) conveys water under this contract through the California Aqueduct to Tupman. Water is then conveyed through the CVC, where it is either delivered to the FKC or exchanged with Arvin-Edison for water available in the FKC.

The KTWD consists primarily of rural agricultural lands. The City of Bakersfield is within the project area. However, it is not within the KTWD. Numerous other businesses, institutions, and governmental agencies provide further support to the area.

Table 1 2008 Land Use in Kern-Tulare Water District

LAND USE	ACRES
Alfalfa	320
Almonds	1,814
Blueberries	279
Cherries	70
Grapes	5,600
Kiwi	199
Lemons	138
Olives	204
Oranges	7,163
Pistachios	3,093
Pomegranates	153
Plums	32
Total Irrigated	**19,065**
Non-irrigated	**4,368**
Total	**23,433**

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, the KTWD would not be able to deliver water to agricultural lands within its district. Due to federal and state regulatory actions in the Delta, ongoing San Joaquin River issues, and increased urbanization throughout the state, the KTWD needs the ability to deliver previously banked water through the FKC to meet its existing in-District demands. Without the previously banked water, land use may be impacted as agricultural lands may not receive enough water to sustain crops.

Proposed Action

The Proposed Action does not involve any construction activities and would not cause any land use changes; therefore, the Proposed Action would not adversely impact land use. Benefits to land use would include the ability of KTWD to deliver this water within their service area at times when other water supplies are not available.

3.5 BIOLOGICAL RESOURCES

3.5.1 Affected Environment

Table 2 below identifies federally listed, proposed and candidate species potentially occurring in the KTWD. This list was obtained on July 21, 2009 by accessing the U.S. Fish

and Wildlife Service's database (Document No. 090721042430) and includes species listed for the Oildale, Rosedale, Stevens, Tupman and Gosford 7 ½ minute U.S. Geological Survey quadrangles. For birds, a county-wide list was obtained on July 16, 2009 for Kern and Tulare counties (Document No. 090716092634).

Table 2 Federally Listed, Proposed & Candidate Species and Migratory Birds Potentially Occurring In Proposed Action Area

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS
INVERTEBRATES		
Branchinecta lynchi	Vernal pool fairy shrimp	Threatened
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Threatened
FISH		
Hypomesus transpacificus	Delta smelt	Threatened
AMPHIBIANS		
Rana aurora draytonii	California red-legged frog	Threatened
REPTILES		
Gambelia (=Crotaphytus) sila	Blunt-nosed leopard lizard	Endangered
Thamnophis gigas	Giant garter snake	Threatened
MAMMALS		
Dipodomys ingens	Giant kangaroo rat	Endangered
Dipodomys nitratoides nitratoides	Tipton kangaroo rat	Endangered
Sorex ornatus relictus	Buena Vista Lake shrew	Endangered
Vulpes macrotis mutica	San Joaquin kit fox	Endangered
BIRDS[2]		
Charadrius alexandrinus nivosus	Western snowy plover	Threatened (Kern County)
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	Candidate (Kern County)
Empidonax traillii extimus	Southwestern willow flycatcher	Endangered (Kern County) (critical habitat)
Gymnogyps californianus	California condor	Endangered (Kern & Tulare counties) (critical habitat)
Vireo bellii pusillus	Least Bell's vireo	Endangered (Kern County)
PLANTS		
Monolopia congdonii (=Lembertia congdonii)	San Joaquin woolly-threads	Endangered

[2] No threatened, endangered, or candidate bird species were listed on the USGS 7.5-minute quadrangles for the project area. The bird species listed herein are from the Kern and Tulare Counties species lists and are considered in this document under the Migratory Bird Treaty Act (16 USC Sec. 703 et. seq.).

3.5.2 Environmental Consequences

No Action
Under the No Action Alternative, there would be no impacts to biological resources, including special-status species, as no construction would occur and the previously banked water would remain in the City's 2800 Acres recharge basin. The conditions of special-status species and habitats would remain the same as they are under the existing conditions described above; therefore, no effects to special-status species or habitat are associated with the No Action Alternative.

Proposed Action
The Proposed Action would involve the return of CVP water previously banked at the City's 2800 Acres. The Proposed Action would not change how water or land is managed. The water returned under the Proposed Action would be used to support irrigated lands already in agricultural production. Existing conveyance would be utilized and no waterways or nesting areas would be created, destroyed or modified in any way under the Proposed Action. Also, with implementation of the Proposed Action, CVP operations would be consistent with existing operating and conveyance agreements. The Proposed Action would be consistent with the actions covered by previous analyses and would not result in any changes from existing operations or conditions.

Reclamation has determined that the Proposed Action would have no effect on special status species or migratory bird species with the potential to occur in the project area of effect. Therefore, no further consultation is required under Section 7 of the Endangered Species Act.

3.6 INDIAN TRUST ASSETS

3.6.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individual Native Americans. Trust status originates from rights imparted by treaties, statutes, or executive orders. Such assets cannot be sold, leased or otherwise alienated without Federal approval. Indian reservations, ranches and allotments are common ITAs. Allotments are parcels of land held in trust for specific individuals that may be located outside reservation boundaries. In addition, such assets include the right to access certain traditional areas and perform traditional ceremonies.

3.6.2 Environmental Consequences

No Action
No ITAs are located within the project area. The condition of Indian trust resources under the No Action Alternative would be the same as it would be under existing conditions; therefore, no effects to ITAs are associated with this alternative.

Proposed Action
The Proposed Action does not affect any ITAs. The nearest ITA is a Public Domain Allotment approximately 34 miles east of the project location; therefore there would be no adverse effects to ITAs as a result of the Proposed Action.

3.7 CULTURAL RESOURCES

3.7.1 Affected Environment

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.7.2 Environmental Consequences

No Action
Under the No Action Alternative, there are no impacts to cultural resources, as there would be no construction or return of banked water. The condition of archaeological and cultural resources under the No Action Alternative would be the same as it would be under existing conditions; therefore, no additional effects to archaeological and cultural resources are associated with this alternative.

Proposed Action
The approval of the proposed action is the type of activity that has no potential to affect historic properties. There will be no new ground disturbance and the transfers will be accomplished using existing facilities. No new land will be put into agricultural production. Because the action will result in no potential to affect historic properties, there will be no impacts to cultural resources as a result of the implementation of the Proposed Action.

3.8 ENVIRONMENTAL JUSTICE

3.8.1 Affected Environment

Executive Order 12989, dated February 11, 1994, requires Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin, from Mexico and Central America. The population of some small communities typically increases during late summer harvest.

The project area is within the City's 2800 Acres Recharge Facility and there are no communities within this area.

3.8.2 Environmental Consequences

No Action
The No Action Alternative would have no impact on environmental justice. The KTWD would not return its previously banked water and conditions would remain the same; therefore, no impacts to minority and disadvantaged populations would result under the No Action Alternative.

Proposed Action
Due to the nature of the Proposed Action (i.e., land use and agriculture would remain unchanged), there would be no adverse effects to minority or disadvantaged populations.

3.9 CLIMATE CHANGE

3.9.1 Affected Environment

The United Nations Intergovernmental Panel on Climate Change predicts that changes in the earth's climate would continue through the 21st century and that the rate of change may increase significantly in the future because of human activity (IPCC, 2001). Many researchers studying California's climate believe that changes in the earth's climate have already affected California and would continue to do so in the future. Climate change may seriously affect the State's water resources. Temperature increases could affect water demand and aquatic ecosystems. Changes in the timing and amount of precipitation and runoff could occur. Sea level rise could adversely affect the Sacramento-San Joaquin River Delta and coastal areas of the State.

Climate change is identified in the 2005 update of the California Water Plan (Bulletin 160-05) as a key consideration in planning for the State's future water management (DWR, 2005). The 2005 Water Plan update qualitatively describes the effects that climate change may have on the State's water supply. It also describes efforts that should be taken to quantitatively evaluate climate change effects for the next Water Plan update.

Sea level rise would conceptually affect water project operations by increasing the need for operations to repulse salt water intruding into the Delta. Such effects were not examined during preparation of the DWR report due to lack of existing tools for that type of analysis (current Work Team activities involve collaborations to develop these necessary tools). The report does discuss surrogates that provide indication of increased operation challenges associated with repulsing saltwater intrusion caused by sea level rise.

3.9.2 Environmental Consequences

No Action
Under the No Action Alternative, there would be no impacts to climate change.

Proposed Action
Since the Proposed Action would have no construction element and would use existing facilities within the range of normal operations, it would have no effect on climate change.

3.10 CUMULATIVE EFFECTS

According to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA Guidelines section 15065(a)(3), a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

In addition to the City's 2800 Acres Recharge Facility (2,800 acres gross area and 1,350 acres recharge area), other Kern Fan Area Groundwater Recharge/Recovery Facilities in the Bakersfield area include the Kern Water Bank (19,900 acres gross area with 4,200 acres recharge area), Pioneer Project (2,253 acres gross area with 800 acres recharge area) and the Berrenda Mesa Project (370 acres gross area and 250 acres recharge area). In accordance with the California Urban Water Management Planning Act (Act), the City has an Urban Water Management Plan (UWMP) that addresses these facilities. The primary objective of the Act is to "direct urban water suppliers to evaluate their existing water conservation efforts, and to the extent practicable, review and implement alternative and supplemental water conservation measures".

The City's Water System adopted and submitted its UWMP in October 2005 and updated it in 2007 based on increased development activities and current conditions within the City. The updated plan describes the management of the groundwater basin to achieve the maximum practicable conservation and efficient use of the water resources. The Proposed Action would have no adverse impacts to these groundwater recharge areas or to the City's management of these areas.

The Proposed Action does not involve any construction or change in water use. It is simply the return of previously banked water from the City's 2800 Acres area back to the FKC via the CVC; therefore, there are no anticipated cumulative effects resulting from the Proposed Action.

4.0 CONSULTATION AND COORDINATION

4.1 FISH AND WILDLIFE COORDINATION ACT (16 USC 651 et. seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the Central Valley Project Improvement Act (CVPIA), of which this action is a part, has been jointly analyzed by Reclamation and the U.S. Fish and Wildlife Service (USFWS) and is being jointly implemented. The Proposed Action does not involve construction projects; therefore, the FWCA does not apply.

4.2 ENDANGERED SPECIES ACT (16 USC 1521 et. seq.)

Section 7 of the Endangered Species Act (ESA) requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with CVP water. The Proposed Action would have no effect on federally listed threatened or endangered species or their designated habitats.

4.3 NATIONAL HISTORIC PRESERVATION ACT (15 USC 470 et. seq.)

Section 106 of the National Historic Preservation Act requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Due to the nature of the proposed project, there would be no effect on any historical, archaeological or cultural resources, and no further compliance actions are required.

4.4 MIGRATORY BIRD TREATY ACT (16 USC Sec. 703 et. seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

4.5 EXECUTIVE ORDER 11988-FLOODPLAIN MANAGEMENT AND EXECUTIVE ORDER 11990-PROTECTION OF WETLANDS

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting floodplains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The project would not affect either concern.

5.0 LIST OF PREPARERS AND REVIEWERS

Shelly Hatleberg, Natural Resource Specialist, Mid-Pacific Region
Tammy LaFramboise, Natural Resource Specialist, Mid-Pacific Region

6.0 REFERENCES

California Department of Water Resources. 2005. California Water Plan Update 2005 (Bulletin 160-05).

City of Bakersfield. 2007. City of Bakersfield 2005 Urban Water Management Plan Update. Prepared by Stetson Engineers, Inc. November 2007.

Friant Water Authority. 2009. Website: http://www.friantwater.org/

Intergovernmental Panel on Climate Change (IPCC). 2001 IPCC Third Assessment Report: Climate Change 2001.

Kern County Water Agency. 1997. Summary of Water Banking Operations, December 31, 1997.

United Nations Intergovernmental Panel on Climate Change. 2001. IPCC Third Assessment Report: Climate Change 2001.

U.S. Bureau of Reclamation. 2006. Final Environmental Assessment for the Kern-Tulare and Rag Gulch Water Districts 25-year Conjunctive Use Groundwater Storage and Extraction Project with North Kern Water Storage District (EA-05-120). USBR South Central California Area Office. March 9, 2006.

U.S. Fish and Wildlife Service. 2009. Species List of Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the USGS Quads Requested (Oil Center, Lamont, Oildale, Rosedale, Stevens, and Gosford) (Document No. 090716035922). July 16, 2009.

U.S. Fish and Wildlife Service. 2009. Species List of Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties Requested (Kern and Tulare) (Document No. 090716092634). July 16, 2009.

7.0 PUBLIC INVOLVEMENT

The Draft EA was circulated to interested parties for a 30-day public review period that began August 26, 2009 and ended September 24, 2009. The Draft EA is posted on Reclamation's Mid-Pacific (MP) Region NEPA website. One comment letter was received from the Arvin-Edison Water Storage District (AEWSD) on September 23, 2009 (Attachment 1). KTWD provided a response to AEWSD in a letter signed by KTWD's General Manager, Steven C. Dalke on October 19, 2009 (Attachment 1).

ATTACHMENT 1
COMMENT LETTER & RESPONSE TO COMMENT

ARVIN-EDISON WATER STORAGE DISTRICT

20401 BEAR MOUNTAIN BOULEVARD
MAILING ADDRESS: P.O. BOX 175
ARVIN, CALIFORNIA 93203-0175

TELEPHONE (661) 854-5573
FAX (661) 854-5213

EMAIL arvined@aewsd.org

September 23, 2009

Shelly Hatleberg
U.S. Department of Interior
Bureau of Reclamation
2800 Cottage Way, MP-410
Sacramento, CA 95825-1856

Re: Draft Environmental Assessment (EA) for Kern-Tulare Water District's Return of Banked Water

Dear Shelly:

Thank you for the opportunity to provide comments on the subject environmental document. Arvin-Edison Water Storage District (AEWSD) generally supports water banking programs such as this; however, we have the following issues we would like to have addressed further, as we were unable to find sufficient details in the subject Environmental Assessment (EA) document and/or its referenced documents to alleviate our concerns.

Our primary concern is regarding potential water quality impacts. We understand that the water returned to Kern-Tulare Water District (Kern-Tulare) from this program is groundwater pumped from the City of Bakersfield wells and would be introduced immediately upstream of AEWSD's Turnout. If so, the water quality impacts to AEWSD would be immediate. AEWSD has a contract supply for water from Millerton Lake from the Friant-Kern Division of the Central Valley Project (CVP). The water quality from that project is some of the highest in the state. Conversely, the EA indicates that groundwater may be introduced into the Friant-Kern Canal (FKC), and so we assume ultimately delivered to AEWSD because of the proximity of our turnout.

AEWSD believes that any degradation to its Friant water supply, and its inherent water quality, is detrimental to AEWSD's long-term viability, as well as its water banking operations. This is particularly true if waters are introduced into the FKC that have levels of various Constituents of Concern (COC's) higher than those found in our Friant water supply.

The EA states that *"...water conveyed under this action would satisfy the then existing water quality standards for the FKC adopted by Friant Water Authority and Reclamation."* It shall be noted that attempts to locate an "adopted" water quality standard document of Friant Water Authority and Reclamation were unsuccessful. The Friant Water Authority

indicated that water quality guidelines had not, in fact, been adopted. AEWSD understands that program specific references to FKC water quality standards of proposed "pump-in" programs currently exist through some Warren Act contracts. AEWSD understands that since the water banked by Kern-Tulare was initially federal water (Class 2 transfer from Shafter-Wasco Irrigation District a Friant Division CVP contractor), this action does not necessitate a Warren Act contract. **Therefore, a water quality standard document does not exist with respect to this action**.

AEWSD believes this proposed action has raised an issue that will also be relevant in any successful recirculation program under the San Joaquin River Settlement and or any banking programs that arise from the need to replace settlement losses; subsequently, AEWSD requests that these water quality impacts, and mitigation measures be more fully addressed.

Thank you,

Steve Collup
Engineer-Manager

cc: David Nixon, Assistant Manager
Jeevan Muhar, Staff Engineer
Steve Dalke, Kern-Tulare Water District
Ron Jacobsma, Friant Water Authority
Michael Jackson, USBR

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KERN-TULARE WATER DISTRICT
RETURN OF BANKED WATER
FINAL ENVIRONMENTAL ASSESSMENT

RESPONSE TO COMMENTS
October 26, 2009

The Kern-Tulare Water District's (KTWD) Return of Banked Water Draft Environmental Assessment was issued for a 30-day public comment review period on August 26, 2009. One comment letter was received from the Arvin-Edison Water Storage District (AEWSD) on September 23, 2009 (attached). The following is the response to that letter:

KTWD responded to AEWSD's comments in a letter dated October 19, 2009 (attached). As indicated in the letter, KTWD will include and administer the delivery of water supply from the Return of Banked Water project consistent with the two district's "Principles of an Agreement" dated March 9, 2004. If AEWSD is unable to exchange fully the water supply from the project, then the water will be delivered under paragraph 9c "Additional Exchange Quantity" of the Agreement (see attached letter).

In addition, should the Agreement expire prior to delivery of the full 2,790 acre-feet referred to in the EA, KTWD and AEWSD will honor the relevant provisions in the Agreement for the portion remaining of the 2,790 acre-feet for the 5-year period referenced in the EA.

AEWSD agreed that the October 19, 2009 response letter from KTWD addresses their concerns and that it satisfactorily addresses all issues brought forth in their September 23, 2009 letter to the Bureau of Reclamation.

KERN-TULARE Water District

October 19, 2009

Steve Collup
Engineer-Manager
Arvin- Edison Water Storage District
P.O. Box 175
Arvin, CA 93203-0175

Subject: Arvin-Edison WSD comments to Draft Environmental Assessment for Kern Tulare Water District's Return of Banked Water

Dear Mr. Collup:

This letter is in response to your letter to Reclamation dated September 23, 2009 regarding the draft Environmental Assessment (EA) for Kern Tulare's Return of Banked Water (Program).

Kern-Tulare and Arvin-Edison have a long history of mutually beneficial water management programs. In that regard, our two Districts currently administer the March 9, 2004 Principles of An Agreement (Agreement), which contains provisions that provide Arvin-Edison with water and or monetary benefits to facilitate an exchange with Kern-Tulare.

Kern-Tulare will include and administer the delivery of water supply from the Program consistent with the Agreement. More specifically, if Arvin-Edison is unable to exchange fully the water supply from the Program, then the water will be delivered under paragraph 9c "Additional Exchange Quantity" of the Agreement which states:

> *"AE acknowledges that, if AE is unable to exchange fully the Annual Exchange and or the Additional Exchange quantities, then K-T/RG may utilize the siphons, and any impacts to AE resulting from K-T/RG's use of these siphons to satisfy in-district demands will be deemed to have been mitigated and AE compensated per other provisions in this agreement. No further compensation shall be due AE from K-T/RG for the use of the siphons."*

In addition, should the Agreement expire prior to delivery of the full 2,790 acre-feet referred to in the EA, Kern-Tulare and Arvin-Edison will honor the relevant provisions in the Agreement for the portion remaining of the 2,790 acre-feet for the 5 year period referenced in the EA.

Pursuant to our conversation and your signature below, we understand that (1) this letter addresses Arvin-Edison's concerns and water quality impacts to Arvin-Edison, if any, will be deemed to be mitigated and (2) it satisfactorily addresses all Arvin-Edison issues in its letter to Reclamation dated September 23, 2009.

Sincerely,

Steven C. Dalke
General Manager

Agreed to this 22 day of October, 2009

Arvin-Edison Water Storage District

Steven C. Collup, Engineer-Manager